



August 11, 2026

Chair Sanchez and Members of the Board
California Air Resources Board (CARB)
1001 I Street,
Sacramento, CA 95814

RE: Using Existing Nitrogen Balance Data for Scope 3 Nitrous Oxide Reporting Under California's SB 253, Corporate Data Accountability Act

Dear California Air Resources Board:

Thank you for the opportunity to provide comments on the implementation of Senate Bill 253 (SB 253), the Climate Corporate Data Accountability Act.¹ On behalf of Natural Resources Defense Council (NRDC), we urge CARB to require agricultural reporting entities to use primary nitrogen data collected through the State Water Resources Control Board's (State Water Board) Irrigated Lands Regulatory Program (ILRP) when reporting their Scope 3 disclosures.²

Incorporating ILRP data into SB 253 implementation would improve the accuracy, consistency, and credibility of agricultural greenhouse gas disclosures while leveraging an existing state dataset. Doing so would advance SB 253's core objective of providing decision-useful emissions data and strengthen California's ability to identify and reduce one of its most significant and under-measured sources of climate pollution, agricultural nitrous oxide (N₂O) emissions.³

CARB Needs Better Nitrogen Data to Meet Its Own Climate Goals

Achieving California's climate goals depends on the quality of data underpinning CARB's emissions inventories and models. In the 2022 Scoping Plan, CARB recognized that reductions in agricultural N₂O emissions are essential to achieving carbon neutrality.⁴ Yet, CARB has also acknowledged significant limitations in the datasets it uses to estimate these emissions, including lack of field-level soil and nitrogen data such as fertilizer applications, crop uptake, and nitrogen management practices.⁵

These limitations create uncertainty in both emissions accounting and policy evaluation. Without accurate nitrogen management data, CARB cannot reliably quantify agricultural N₂O emissions, identify the most significant emissions sources, or assess the effectiveness of climate-smart agricultural practices.⁶ SB 253 presents a unique opportunity to close this gap by integrating primary nitrogen management data that California farmers already report through the ILRP.⁷

ILRP Nitrogen Balance Metrics Offer the Primary Standard CARB Requested

During CARB's July 21, 2026 public workshop, staff explicitly requested stakeholder input regarding the prioritization of primary data and opportunities for better reporting standardization.⁸ NRDC commends and supports CARB's request for prioritizing primary data

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and standardizing reporting. The ILRP nitrogen balance framework directly addresses both objectives.

A nitrogen balance metric (Nitrogen Applied - Nitrogen Removed) provides scientifically grounded indicator of nitrogen available for loss to the environment through volatilization, runoff, leaching, and N₂O emissions.⁹ Because this information is already collected under an established regulatory program, it represents a rare opportunity to improve CARB's emissions accounting with existing primary data rather than relying on generalized assumptions or industry-average emissions factors.

Requiring use of ILRP data would also reduce reporting burdens. Farmers already submit nitrogen balance data to the State Water Board, meaning agricultural reporting entities would not need to invest in robust and new data collection efforts.¹⁰ CARB can advance data quality while minimizing compliance costs, an outcome that benefits both regulators and regulated entities.

Primary Data Benefits Both Regulators and Industry

The use of primary data is fundamental to the success of SB 253. As noted in recent literature and summarized in a roadmap co-convened by NRDC, “precision modeling has been shown to reduce N₂O blind spots by up to 73 percent compared with legacy models, turning a hidden liability into a bankable asset.”¹¹ Companies increasingly rely on emissions disclosures to manage supply-chain risk, set climate targets, attract investment, and substantiate environmental claims.¹² These decisions are only as reliable as the underlying data.¹³

Agricultural emissions estimates based on generalized assumptions obscures variations across farms, crops, and management practices. By contrast, primary field-level data enables more accurate emissions quantification, allowing CARB to identify top-emitting supply chains and farms, compare across companies, and evaluate farm-level nitrogen interventions.¹⁴ Incorporating primary data will also help CARB direct its limited public resources to the companies and areas of highest impact, which is especially important given California's ongoing budget constraints.¹⁵ At the same time, CARB would gain access to a richer dataset capable of supporting more sophisticated, predictive modeling.

As summarized in the recent state of the science report, the highest quality MMRV nitrous oxide systems require greater investment, coordination, and data.¹⁶ The recommendations in this comment letter are an important first step toward improving emissions management, understanding nitrogen flows, and supporting the development of future Tier 3 models.

Conclusion

SB 253 presents CARB with an opportunity not only to improve corporate climate disclosure, but also to strengthen California's broader greenhouse gas accounting framework.¹⁷ The agricultural sector remains one of the largest sources of N₂O emissions, yet California already has a valuable source of field-level nitrogen management data through the ILRP.

NRDC respectfully urges CARB to require agricultural reporting entities to incorporate ILRP nitrogen balance data into Scope 3 emissions disclosures. By utilizing existing primary data,

CARB can establish a stronger foundation for SB 253 implementation and ensure corporate disclosures better reflect the realities of California’s agricultural landscape, another one of CARB’s stated goals.¹⁸

Thank you for your consideration of these comments, and please reach out if you have any questions or would like to discuss any of the issues in this letter.

Sincerely,

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¹ SB-253 Climate Corporate Data Accountability Act. Accessed August 5, 2026.

https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=202320240SB253.

² California State Water Resources Control Board. 2023. Order WQ 2023-0081: In the Matter of Review of General Waste Discharge Requirements for Discharges from Irrigated Lands (Order No. R3-2021-0040). Order WQ 2023-0081 (SWRCB/OCC Files A-2751(a)-(B)). California State Water Resources Control Board.

https://www.waterboards.ca.gov/public_notices/petitions/water_quality/docs/2023/wqo2023-0081.pdf.

³ Rose, J. P., Daniel Rath, Arohi Sharma, Maya Korb, and Matt Kaplan. 2026. The Nitrogen Pollution Crisis: Fertilizer Overuse Is Poisoning America’s Water, Air, and Ecosystems. Natural Resources Defense Council.

https://www.nrdc.org/sites/default/files/2026-05/Nitrogen_Pollution_R_26-05-B_04.pdf.

⁴ “2022 Scoping Plan Documents | California Air Resources Board.” n.d. Accessed August 5, 2026. <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents>; IPCC Global Warming Potential Values. 2024. Version 2.0. Greenhouse Gas Protocol. <https://ghgprotocol.org/sites/default/files/2024-08/Global-Warming-Potential-Values%20%28August%202024%29.pdf>.

⁵ “Current California GHG Emission Inventory Data | California Air Resources Board.” n.d. Accessed August 5, 2026. <https://ww2.arb.ca.gov/ghg-inventory-data>.

⁶ Rath, Daniel, Rachel Opitz, Matt Kaplan, et al. 2026. Ag Nitrous Oxide MMRV Roadmap 2026.Pdf. May 13. <https://osf.io/vkepc>.

⁷ “Irrigated Lands Regulatory Program | Central Valley Regional Water Quality Control Board.” n.d. Accessed August 5, 2026. https://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_land/.

⁸ California Air Resources Board. 2026. “SB 253 Public Workshop: California Corporate Greenhouse Gas Reporting Program.” July 21. https://ww2.arb.ca.gov/sites/default/files/2026-07/SB_253_Presentation_July_2026.pdf.

⁹ Rath, Daniel. 2025. Scientific Literature Review for Questions Posed to the Upcoming Second Statewide Agricultural Expert Panel. With Community Water Center, California Coastkeeper Alliance, California Rural Legal Assistance, Inc., et al. Natural Resources Defense Council (NRDC).

¹⁰ “Total Nitrogen Applied (TNA) Report / Irrigation and Nutrient Management Plan (INMP) Summary Report | Central Coast Regional Water Quality Control Board.” n.d. Accessed August 5, 2026. https://www.waterboards.ca.gov/rwqcb3/water_issues/programs/ilp/tna_inmp.html.

¹¹ Dhaliwal, Jashanjeet Kaur, Dinesh Panday, G. Philip Robertson, and Debasish Saha. 2025. “Machine Learning Reveals Dynamic Controls of Soil Nitrous Oxide Emissions from Diverse Long-Term Cropping Systems.” *Journal of Environmental Quality* 54 (1): 132–46. <https://doi.org/10.1002/jeq2.20637>; Rath, Daniel, Rachel Opitz, Matt Kaplan, et al. 2026. Ag Nitrous Oxide MMRV Roadmap 2026.Pdf. May 13. <https://osf.io/vkepc>.

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- ¹² Matthews, H. Scott, Chris T. Hendrickson, and Christopher L. Weber. 2008. "The Importance of Carbon Footprint Estimation Boundaries." *Environmental Science & Technology* 42 (16): 5839–42. <https://doi.org/10.1021/es703112w>; "What Is ESG Reporting? A Comprehensive Guide | SAP." n.d. Accessed June 9, 2026. <https://www.sap.com/resources/esg-reporting-guide>.
- ¹³ Jahn, Beate, Sarah Friedrich, Joachim Behnke, et al. 2022. "On the Role of Data, Statistics and Decisions in a Pandemic." *Advances in Statistical Analysis* 106 (3): 349–82. <https://doi.org/10.1007/s10182-022-00439-7>.
- ¹⁴ Nitrogen modeling for soil management: *Journal of Soil and Water Conservation*: Vol 57, No 6. (n.d.). Retrieved July 15, 2026, from https://www.tandfonline.com/doi/abs/10.1080/00224561.2002.12457474?casa_token=7843SVFCLgEAAAAA:cDsB0-qxg0jBV9Xt5vmGydgDepmjrc-usqN3iSV1OyH0XesMe-70dJkekORCsRxMerFOxAA8O9k.
- ¹⁵ World Bank. n.d. "Data-Driven Development." Text/HTML. Accessed August 5, 2026. <https://www.worldbank.org/en/topic/digital/publication/data-driven-development>.
- ¹⁶ Rath, Daniel, Rachel Opitz, Matt Kaplan, et al. 2026. *Ag Nitrous Oxide MMRV Roadmap 2026*. Pdf. May 13. <https://osf.io/vkepc>.
- ¹⁷ World Resources Institute & World Business Council for Sustainable Development. 2011. *Corporate Value Chain (Scope 3) Accounting and Reporting Standard: Supplement to the GHG Protocol Corporate Accounting and Reporting Standard*. Washington, D.C.: WRI/WBCSD, Chapter 7, p. 77. https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf
- ¹⁸ California Air Resources Board. 2026. "SB 253 Public Workshop: California Corporate Greenhouse Gas Reporting Program." July 21. https://ww2.arb.ca.gov/sites/default/files/2026-07/SB_253_Presentation_July_2026.pdf; Rath, Daniel, Rachel Opitz, Matt Kaplan, et al. 2026. *Ag Nitrous Oxide MMRV Roadmap 2026*. Pdf. May 13. <https://osf.io/vkepc>; Rath, Daniel. 2025. *Scientific Literature Review for Questions Posed to the Upcoming Second Statewide Agricultural Expert Panel*. With Community Water Center, California Coastkeeper Alliance, California Rural Legal Assistance, Inc., et al. Natural Resources Defense Council (NRDC).